

APPENDIX C4:

HERITAGE IMPACT ASSESSMENT

**PROPOSED UMKHOMAZI WATER PROJECT PHASE 1,
RAW WATER COMPONENT**

**Update to
Phase 1 Heritage Impact Assessment**

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1. INTRODUCTION

The current water resources of the Integrated Mgeni Water Supply System (WSS) in KwaZulu-Natal (KZN) are insufficient to meet the long-term water requirements of the system. The uMkhomazi Water Project Phase 1 (uMWP-1) proposes the transfer of water from the undeveloped uMkhomazi River to the existing Mgeni system. This transfer scheme is deemed to be the most viable option to provide a large volume of water to fulfil the long-term water requirements of the Mgeni system.

The uMWP-1 consists of both Raw Water and Potable Water components which are being undertaken by the Department of Water and Sanitation (DWS) and Umgeni Water, respectively. Nemai Consulting was appointed as the independent Environmental Assessment Practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for both components of the uMWP-1.

The Final EIA Reports (Raw Water and Potable Water) were submitted to the Department of Environmental Affairs (DEA) on 10 November 2016. A letter (dated 13 February 2017) was received from DEA which rejected the Final EIA Report for uMWP-1 Raw Water and requested additional information.

In response, the following additional alternatives were identified for the proposed uMWP-1 Raw Water components:

- Two additional tunnel routes (Option B and Option C) were identified, as well as a tunnel corridor; and
- The previous route for the realignment of the R617, as assessed as part of the EIA, was discarded due to its encroachment into the Impendle Nature Reserve. Four new route options (Option 1A, Option 1B, Option 2 and Option 3) were identified for the deviation of the R617, as well as a road corridor.

This document serves as an Addendum to the Phase 1 Heritage Impact Assessment (HIA) specialist report that was compiled and attached to the Final EIA Report for uMWP-1 Raw Water. It provides an assessment of the abovementioned additional alternatives.

2. R617 ROUTE ALIGNMENTS

The four route alignments and corridor option were assessed in terms of their potential impact on heritage resources as listed in section 3 of the National Heritage Resources Act (NHRA) (Act 25 of 1999).

Options 1A and 1B initially follow the same alignment from the R617 heading south behind Lundy's Hill Store before crossing the uMkhomazi River approximately 170m south of the existing old bridge (built in 1896). It is recommended that the alignment is moved 15 m further south of Lundy's Hill Store in case there are graves situated around the buildings.

It is also recommended that the alignment is moved at least 15 m south of the dwellings (at approximately 29°44'35.51"S 29°54'34.63"E) that are encountered just after crossing the uMkhomazi River. This is to avoid impacting on graves (if any) that may be found close to these dwellings.

The alignment follows the existing D1212 for about 2km. At this point Option 1B separates from Option 1A and heads in a north-westerly direction towards the Mdayane Village. If the existing D1212 needs to be widened then structures may be affected along a section of the road. One building that is used as a church could be older than 60 years and is therefore protected by section 33 of the KwaZulu-Natal Heritage Act (No. 4 of 2008) which states that no structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the [Amafa] Council.

An inspection of the alignment followed by Option 1B just after it separates from Option 1A is recommended as the alignment is situated very close to several homesteads where the potential for impacting graves is high.

Option 2 is the route furthest to the north slotting in below the Impendle Nature Reserve and is the longest route at 8,250km long. The route crosses undeveloped terrain which is a concern as the route may impact on unidentified heritage resources along the proposed alignment. It also passes close to at least four dwellings where it may impact on graves.

Option 3 also crosses undeveloped land with the same concerns as mentioned in terms of Option 2 and this option will also impact on the dry stone walling identified in the Phase 1 HIA

(see page 21 of the report). The dry stone walling was identified as being of heritage significance hence it should not be impacted by the realignment of the R617 road.

The impacts mentioned above were assessed during the Phase 1 HIA and Tables 5, 6, 8 and 9 of the HIA report and still apply to the new route alignments together with the associated mitigation measures including the recommendation that a Phase 2 HIA is undertaken to identify all graves that will be impacted by the proposed R617 realignment.

The preferred alternative for the realignment of the R617 is Option 1A as much of the proposed option follows the existing D1212 road meaning that the area is already highly disturbed and the possibility of finding intact heritage resources along this alignment is low. In addition, the option is preferred as it is the shortest of the three options – the shorter the route alignment, the less chance is there of the route impacting on heritage sites as opposed to the other options where the longer the length of the route option, the higher the risk or possibility that the route option could impact on heritage resources.

The corridor option is accepted with caution and with the provision that homesteads, graves, protected structures (drystone walling, etc.) and other heritage resources are avoided by the route option that is eventually decided upon. There should be a minimum distance of 15 m between the route option and the heritage resources mentioned.

In terms of archaeology, none of the route alignments pose a danger to any known archaeological sites. The desktop survey also did not show any potential archaeological sites such as Late Iron Age sites that may occur in the region. There are no archaeological sites within 1 km to any of the proposed alternative routes. An indication of impacts and associated mitigation measures are the same as already provided in the Phase 1 HIA report.

The palaeontology of the western half of the raw water component is high to very high hence the recommendation of a Phase 2 Palaeontological Impact Assessment (PIA) is still applies for all components of the proposed development.

3. TUNNEL ROUTE OPTIONS

The two additional tunnel routes and corridor option were assessed in terms of their potential impact on heritage resources as listed in section 3 of the NHRA.

The Phase 1 HIA highlighted concerns regarding the inlet portal to the proposed tunnel as it will be situated not far from the graves found east of the Mncwabe homestead mentioned on pages 26-28 of the HIA report. Due to the proximity of the inlet portal to the large amount of graves found close to it, it was recommended that during the Phase 2 investigation, specific attention be given to the inlet site to ascertain the presence of heritage resources. The potential impact on heritage resources remains a concern in terms of the additional tunnel options / corridor option and the recommended Phase 2 investigation must be undertaken.

The same applies in terms of the outlet portal as the area where the works for the tunnel outlet is proposed is one of the few areas in the area that is undisturbed by agricultural activities. It is therefore suggested that the area is assessed during the Phase 2 assessment to ensure that no unmarked graves or other heritage sites have been missed during the Phase 1 assessment.

The impacts mentioned above were assessed during the Phase 1 HIA and Tables 6, 7, 8, 9 and 10 of the HIA report still apply to the tunnel options as well as the recommended mitigation measures.

There is no preferred tunnel option. The corridor option is supported as long as the additional studies as mentioned above are undertaken. It is also recommended that any other surface work apart from the inlet and outlet portals, including the proposed vent shafts, spoil sites and access routes, be assessed by a heritage specialist prior to work taking place.

In terms of archaeology, none of the tunnel route options pose a danger to any known archaeological sites. However, there are concerns regarding the many indigenous forests that the proposed tunnel passes beneath from a 'living heritage' perspective. These forests were frequented by the Drakensberg San in term of elephant hunting in the early decades of the 19th century and are still being visited by Zulu-speaking traditional healers for the collection of traditional medicines and for the training of their students. If any of the forests are to be affected by surface operations (roads, spoil sites, etc.), a ground survey with community involvement will be required in order to ascertain the heritage significance of these forests.

The assessment of significance of the impact on cultural and living heritage, using the same impact assessment methodology as used in the Phase 1 HIA, is provided below.

Table 1: Impact assessment: tunnel

Environmental Feature	Cultural and Living heritage	
Relevant Alternatives & Activities	Tunnel, spoil sites, vent shafts and access roads	
Project life-cycle	Construction & operational phases	
Potential Impact	Proposed Management Objectives / Mitigation Measures	
<ul style="list-style-type: none"> Destruction or damage to cultural heritage sites including graves, living heritage sites (indigenous forests), sandstone outcrops, etc. 	<ol style="list-style-type: none"> Phase 2 HIA of the areas above the tunnel that will be directly impacted by the tunnel construction such as spoil sites, access roads and vent shafts. The Phase 2 HIA must include interaction with communities as they will know which indigenous forests are used by traditional healers During construction, if any heritage resources are found (chance finds) the following protocol must be followed: <ol style="list-style-type: none"> All work must stop in the vicinity of the find The Contractor or ECO must be informed and the find barricaded off to prevent further interference or damage Amafa must be informed and a registered heritage specialist must be appointed to undertake an assessment of the find. Depending of what is found and the significance thereof, the specialist will advise on the way forward. If the resource needs to be removed/altered/destroyed then the necessary permit/s must be obtained from Amafa Only once the specialist gives the go-ahead can work commence in the area Under no circumstance can heritage material be destroyed or removed from the site Should any remains be found that could potentially be recent human remains then the SAPS must be contacted. No remains may be removed by the SAPS or any other party until the correct permits have been obtained. 	

	+/- Impact	Extent	Magnitude	Duration	Probability	Significance
Before mitigation	- negative	Local	High	Short-term	Likely	3
After mitigation	-	Local	Medium to Low	Short-term	Unlikely	2

The palaeontology for the central and eastern section of the raw water component fall in an area of moderate fossil sensitivity. It was recommended by the palaeontologist that no further studies were necessary for this section of the project because there are no records of fossils from the area.

4. CONCLUSION

The desktop survey of the additional route alignments for the R617 road indicated that route Option 1A is the preferred route as much of its length is situated along the existing D1212 road which is a disturbed environment meaning that there is a lower risk of the proposed alignment impacting on intact heritage resources than if it crossed large areas of undisturbed land.

The corridor option in terms of the realignment of the R617 is supported with caution as long as heritage resources are avoided by the route alignment that is eventually decided upon.

In terms of the proposed tunnel, the additional studies recommended in the Phase 1 HIA for the inlet and outlet portals still apply for the new routes. In addition, the potential impacts of surface works on heritage resources and living heritage need to be assessed prior to work commencing on the tunnel construction. The assessment of the significance of the potential impacts on cultural and living heritage indicated that there would be a residual impact after mitigation due to the largely undisturbed environment that currently exists in many areas across the surface of the proposed tunnel.

In terms of the corridor option for the proposed tunnel, this is supported especially if the corridor option is used to avoid sensitive surface areas by activities that may impact on heritage resources.